

WHAT IS CLAIMED IS

1. An electronic diving watch comprising a sealed case containing a timepiece movement covered by a dial, the watch comprising at least first graduations corresponding to time indications, said timepiece movement comprising electronic circuits adapted to generate time signals for motor means controlling at least
5 respective first and second analog display organs, said analog display organs being disposed above the dial to display the current time in a first mode of operation called the time mode, the watch further comprising a pressure sensor adapted to produce electric signals representing the surrounding pressure and to supply said signals to the said electronic circuits, the diving watch having at least a second mode of
10 operation in which display of data relating to the performance of diving is provided, wherein the display of said data relating to the performance of diving is effected by at least one of said display organs in connection with said first graduations corresponding to the time indications, wherein said data relating to the diving are representative of the maximum remaining duration during which the user of the watch
15 can continue with a current dive before needing to perform a decompressing stage during the ascent, and wherein said first display organ is further arranged to be able to move in the anticlockwise sense relative said first graduations to indicate said remaining duration.

2. The diving watch according to claim 1, wherein said electronic circuits
20 comprise means allowing a single stage to be defined to be effected by the user in the event of exceeding said maximum remaining duration and to control said first display organ in such a manner that it displays the duration of said stage with respect to second graduations.

3. The diving watch according to claim 1, wherein said data relating to the
25 performance of diving are further representative of the instantaneous depth, the display of the instantaneous depth being realised by said second display organ in connection with said first graduations and wherein said second display organ is also arranged to be able to move in the anticlockwise sense.

4. The diving watch according to claim 2, wherein said data relating to the
30 performance of diving are further representative of the instantaneous depth, the display of the instantaneous depth being realised by said second display organ in connection with said first graduations and wherein said second display organ is also arranged to be able to move in the anticlockwise sense.

5. The diving watch according to claim 1, wherein the dial has second graduations whose unit is the minute and which is divided into at least a first and a second zone with different respective visual appearances.

6. The diving watch according to claim 5, wherein it further comprises a third zone in said second graduations, the first zone preferably extending in the anticlockwise sense from the position corresponding to the indication 59 minutes of the first graduations over at least two thirds of the circumference of the dial while the second zone is defined by the complement of said first zone up to the position corresponding to the indication 1 minute of the first graduations and preferably having the colour orange, said first zone being of a different colour, the third zone being comprised between the positions corresponding respectively to the indications 1 minute and 59 minutes of the first graduations, preferably exhibiting a third colour and serving to indicate in relation to said first display organ that the maximum remaining duration has attained a value of zero.

7. The diving watch according to claim 1, wherein the display of a countdown of predetermined duration, preferably of the order of 3 minutes, is realised by said first organ or hour hand, in an automatic manner and in connection with said first graduations, when the user ascends to a predetermined depth, preferably of the order of 5 meters.

8. The diving watch according to claim 5, wherein the first zone preferably extends, in the clockwise sense, from the position corresponding to the indication 59 minutes of the first graduations over at least three quarters of the circumference of the dial and indicates in connection with the hour hand the maximum remaining duration before having to perform a decompression stage, starting from the moment when said maximum remaining duration is less than the duration indicated at the end of the first zone, while the second zone is defined by the complement of said first zone over a complete circumference, the second zone comprising a scale of supplementary graduations whose unit is the minute, indicating in connection with the hour hand the duration of a single stage to be effected by the user at a predetermined depth in case of exceeding said maximum remaining duration.

9. The diving watch according to claim 8, wherein the second graduations comprise a third zone, preferably of green colour, centred on the twelve hour position and extending over less than four minutes, the corresponding ends of said two first zones being offset in consequence, said third zone allowing indication, in relation to the hour hand that the decompression stage to be effected has ended and that the user of the watch may start to resurface in complete safety.

10. The diving watch according to claim 1, wherein it comprises at least one control member whose movements are detected by said electronic circuits and wherein means are provided such that, in the diving mode of operation, a display of the elapsed duration of the current dive is given by said first organ in response to
5 actuation of said control member while a display of the maximum depth attained during the current dive is given by said second display organ.

11. The diving watch according to claim 1, wherein it comprises memory means and at least one control member whose movements are detected by said electronic circuits, and wherein a display of the total duration of the last effected dive
10 is given by said first display organ in response to first actuation of said control member during the time mode of operation, while a display of the maximum depth attained by the user during said last dive is given by said second display organ in connection with said first graduations.

12. The diving watch according to claim 11, wherein means are provided
15 such that a third mode of operation or historical mode is adapted to be activated in response to a predetermined sequence of actuations of said control member, in which mode each of said display organs reproduces its behaviour in the last dive with scales of time and depth adapted to the parameters of the last dive.

13. The diving watch according to claim 12, wherein it is provided that, in the
20 case of dives whose maximum depth attained does not exceed 6 meters, the behaviour of the second display organ is reproduced in the historical mode in such a manner that the indications provided by the first graduations correspond to ten times the depth effectively indicated by said second display organ.

14. The diving watch according to claim 11, wherein said memory means are
25 adapted to store the measurements effected at least in the course of the last two dives, sorting these in chronological rank, and wherein supplementary means are provided such that, prior to the display of said measurements, the display organs come together facing the first graduations to indicate the rank of the corresponding dive, action on said control member enabling passage from one dive to another.

30 15. The diving watch according to claim 1, wherein means are provided to detect the start of a dive and to activate the diving mode automatically.

16. The method of displaying data relating to the practise of diving on a diving watch comprising a sealed case containing a timepiece movement covered by a dial, the watch comprising at least first graduations corresponding to time indications,
35 said timepiece movement comprising electronic circuits adapted to generate time signals for motor means controlling respectively at least a first and a second analog display organ, said analog display organs being disposed above the dial to display the

current time in a first mode of operation called the time mode, the watch further comprising a pressure sensor adapted to produce electric signals representing the surrounding pressure and to provide said signals to said electronic circuits, the diving watch comprising at least a second mode of operation in which a display of data
5 relating to the practise of diving is provided, wherein said data relating to diving represent the maximum remaining duration during which the user of the watch can continue a current dive before having to effect a decompression stage during the ascent, and wherein said first and second organs are hands respectively indicating hours and minutes in the time mode of operation, and wherein said first graduations
10 comprise in particular minute indications and wherein on switching to the diving mode, the hour hand is positioned initially at a predetermined position and wherein, from the moment when said maximum remaining duration becomes less than the duration corresponding to said predetermined position, said hour hand starts to rotate, initially in the anticlockwise sense, in such a manner as to display said remaining duration at
15 each instant, in connection with said first graduations.

17. The display method according to claim 16, wherein, after said maximum remaining duration has reached a value of zero, said hour hand displays the duration of a decompression stage to be effected at a predetermined depth during the ascent, in connection with supplementary graduations.